

Abstract

Inductive flow meter for electrically conductive liquids

In the case of an inductive flow meter for electrically conductive liquids having an insulating flow channel section of circular cross section, a pair of electrodes situated diametrically opposite one another and electrically coupled to the electrically conductive liquid, and having a magnetic field generation system that surrounds the flow channel section at a specific angle of wrap and generates a magnetic field with a field line direction substantially perpendicular to the connecting straight line between the measuring electrodes and perpendicular to the flow channel longitudinal axis, an increased insensitivity to measured value falsifications on the basis of variations that are dependent on flow rate, in the flow profile in the flow channel section, or on the basis of asymmetries in the flow profile relative to the flow channel middle axis is achieved by virtue of the fact that active area arrangements, specifically areal formations, onto which the field lines of the magnetic field generation system penetrates the flow channel inner wall in a restricted fashion are dimensioned in a particular way, specifically in such a way that, in a developed presentation of the flow channel inner wall, bounding straight lines that are laid tangentially against the active area arrangements and touch the active area arrangements at two points from outside, converge in pairs in the direction of the respective location of the measuring electrodes, and are located between the respective two points of contact concave regions in which the boundary lines of the active area arrangements have no points of contact of any sort with the tangential bounding straight lines.